

MEMORANDUM

SUBJECT: Comments on the PRPs Responses to Comments on the Gulfco SLERA

FROM: Susan Roddy

To: Gary Miller

DATE: January 15, 2010

I have reviewed the PRPs responses to comments dated December 22, 2009 (and discussed at the January 6, 2010 meeting in Austin for the Gulfco May 2009 SLERA) as well as the Updated December 2009 SLERA. The following are comments (numbered according to the EPA December 4, 2009 comments and the PRP's responses) regarding deficiencies requiring correction to be responsive to EPA comments:

The main comments of concern, as a summary of the comments below, include:

A Scientific Decision Management Point (SDMP) to continue on to a BERA shall be included in the SLERA, and a Problem Formulation, Work Plan, and Sampling and Analysis Plan shall accompany the SLERA.

Average exposure concentrations shall not be used and shall be removed from the document.

Comparisons based solely on ERMs shall not be used and shall be removed from the document.

The decision to further evaluate the food chain effects for detected bioaccumulative surface water contaminants shall not be based on water quality criteria (WQC) or TX Water Quality Standards (WQS). Food chain evaluation shall be conducted for all detected bioaccumulative surface water contaminants. All statements shall be removed from the document regarding the evaluation of these bioaccumulative contaminants for food chain effects based on WQC or WQS.

A Refinement of Contaminants of Potential Concern (COPCs) as a second round of evaluation shall be conducted using life history parameters that are average values for body weights and average values for food and media ingestion rates for all media and all receptors.

All interpretative statements leading to the perception that background was used in interpretation and presentation of the results shall be removed.

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The use of 95 UCL comparisons, or in interpretations or presentations for the sedentary receptors shall be removed from the document. The statements about visual interpretation of stress to benthic receptors shall be eliminated. The statements on hundreds of acres of wetland habitat regarding benthic receptors shall be eliminated.

All COPCs with HQs exceeding unity and all COPCs exceeding ecotoxicity values including AET ecotoxicity values shall be presented on Figures.

Red-line/strike-out (“compare to”) and responses to comments shall be provided.

GENERAL COMMENTS

General Comment #1:

a)

All comparisons based solely on ERM shall be removed from the document including text, Tables, Figures, and Appendices.

Page x, second complete paragraph: The first third of the second sentence shall be removed.

Page x, last paragraph, last sentence: This sentence shall be eliminated.

Page xi, in the third paragraph: Rewording shall be written to exclude comparison to ERMs, and instead, mention the comparison to ERLs (as well as comparison to the midpoint of the ERL/ERM).

Page xi, fourth paragraph, in the second sentence: Wording on ERM comparison shall be substituted with wording for ERL comparison. And, in the third sentence, substitute an ERL comparison statement for the ERM comparison statement.

Page 29, top of the page: In the first complete sentence, the word “ERM” shall be removed, and in the third sentence, the words “or ERM” shall be removed. And, all subsequent recalculations and presentations of the evaluation shall be done.

Pages 30-31: The sentence at the end of page 30 continuing onto page 31 on the comparison to the ERM shall be removed; rather, the presentation shall be for exceedance of the ERL. Also, the ERM comparison language shall be removed on page 31 (Section 3.4.6, first paragraph, next-to-last sentence), page 31 (last sentence), and page 32 (Section 3.4.7, second paragraph, first and second sentences).

Page 43, Section 5.2.1, first paragraph, fourth sentence: The words “No compounds were measured in excess of their ERM” shall be removed.

d)

All comparisons to 95 UCLs (including discussions, Tables, and Appendices) for sedentary receptors shall be eliminated.

Figures shall be provided for all the contaminants with hazard quotient exceedances of unity for all ecotoxicity values used as allowed in the comparisons (including AETs).

All statements regarding hundreds of acres with respect to risk to benthic receptors shall be removed. It is not acceptable to dilute out risk for benthic receptors over hundreds of acres of wetland habitat.

On page xi, in the first paragraph, the second sentence shall be substituted with "Localized adverse effects may be possible at the sampling locations that exceed the mid-point of the ERL/ERM".

On pages xi and 45, the sentences (about whether benthic receptors are stressed, and about how low the benchmark is for dibenzo (a,h) anthracene) shall be eliminated. The word "stressed" elsewhere in the document regarding the benthic community shall be removed from the document since visual interpretation of "stress" is not an appropriate line of evidence.

All the report presentations shall be changed from RME concentration comparisons for the benthic receptor to maxima concentration comparisons. For example, see pages 30 (Section 3.4.4, first paragraph, first sentence), 31 (the first complete sentence), 31 (Section 3.4.6, the first, second, and seventh sentences), and 34 (Section 3.4.7, the second sentence).

Page 36, Section 4.1.4: The sentence which states "However, since the assessment endpoint is based on community survival and productivity, it is acceptable to use summary statistics to represent community risks" shall be eliminated.

Page 42, Section 5.2, both paragraphs: Discussion shall be reworded to be for maxima concentration (not RME) exposure scenarios for the sedentary receptors.

Page 44: The first complete sentence shall be eliminated.

Page 44, Section 5.2.3, first paragraph: The fourth sentence shall be eliminated.

Tables 18 and 19: For the sedentary receptors (earthworms, and plants, benthos and zooplankton), maxima concentrations shall be substituted for 95 UCL (or RME) concentrations in the Testable Hypotheses columns.

Tables 24 and 25: Include columns for maxima HQs for sedentary receptors, and remove the 95 UCL, RME, columns.

General Comment #3:

See also Specific Comment #13:

Additional ecological investigation shall be done, and the Problem Formulation, Work Plan, Sampling and Analysis Plan, and the BERA shall be completed. The ecological investigation shall include collecting site-specific tissue contaminant residue data, and conducting toxicity testing studies with the purpose of reducing uncertainty.

The blue crab site-specific tissue contaminant residue data (not the sport fish tissue data) already collected for the human health risk assessment shall be used in the food chain algorithm calculation spreadsheets for this SLERA where crab is used as the food in the SLERA spreadsheets for ecological receptors of interest (to further reduce the uncertainty and refine the COPCs).

The SLERA shall include a SDMP at the end of the text with wording that shall state "The information indicates a potential for adverse ecological effects, and a more thorough assessment is warranted (i.e., continue to Step 3 of EPA's ERAGS process). This conclusion is based on exceedances of protective ecological benchmarks for direct contact toxicity as well as literature-based food chain hazard quotients that exceed unity." The BERA shall address both direct contact toxicity (for nonbioaccumulative contaminants) and food chain effects (for bioaccumulative contaminants).

The BERA Work Plan and Sampling and Analysis Plan shall include sample numbers and sample locations with rationale, sampling methodology, identification of the toxicity testing and analytical laboratories to be used, the toxicity testing protocol to be used (including any modification with justification), and language describing a priori the interpretation to be used for the data results. These documents including the BERA Problem Formulation shall include rationales for toxicity test studies (including using *Leptocheirus* and *Hyalloa azteca* sediment toxicity test protocols), tissue residue collection (including using fiddler crabs), and proposal to collect concurrent and co-located media (i.e., sediment, both bulk sediment and porewater sediment) analytical data including the contaminants to be analyzed with rationale. Also this shall include acid volatile sulfide/simultaneously extracted metals (AVS/SEM) and organic carbon analyses.

Page 42, first and second sentences: The word "can" in the first and second sentences under Section 5.0 shall be replaced with the words "is to".

Page 42: The last sentence last in the third paragraph under Section 5.0 regarding "conditional estimates of risk" shall be eliminated.

A Refinement of Contaminants of Potential Concern (COPCs) shall be done for food chain effect evaluation of detected bioaccumulative contaminants.

This “Refinement” (Step 3a) shall include (for life history parameters for ecological food chain receptors), the use of average (instead of maxima) ingestion rates for both media and foods consumed, and average (instead of minima) body weights for food chain receptors being assessed. Along with this “Refinement”, aquatic and terrestrial Tables as well as text shall be provided clearly identifying and summarizing (for each bioaccumulative contaminant, for each medium, and for each food chain receptor) all of the life history parameters used in the original evaluation and in the “Refinement” evaluation for the food chain receptors including both maxima and average ingestion rates (for all media including surface water as well as soil and sediment, and for all food items being assessed), and also both minima and average body weight values for all receptors being assessed in all media. These Tables shall include reference citations for all of the life history parameters. As this Refinement is to be done for nonsedentary ecological food chain receptors, 95 UCLs shall be used for the exposure point concentrations. Area Use Factors (AUFs) may be a fraction of unity for those receptors if demonstrated by literature citations that the receptors have a home range size greater than the size of the site; otherwise, a default of one for the AUF shall be continued in the “Refinement”. BAFs, BSAFs, and BCFs used shall continue to be conservative values (since no site-specific tissue residue contaminant has to date been collected in support of the baseline ecological risk assessment, with the exception of blue crab tissue data which was already collected for the human health risk assessment).

Separately appended spreadsheets for the “Refinement” shall be provided (in addition to the original spreadsheets for the food chain evaluation that used the more conservative life history parameters).

There shall be provided text describing the “Refinement” and HQ results (distinguishing the HQ results before and after the “Refinement”). And, a Table summarizing the “Refinement’s” HQ results, and Figures shall be added based on the results of the “Refinement”. For those bioaccumulative COPCs remaining in the ecological risk assessment (due to HQs exceeding unity) after conducting the “Refinement”, a BERA Problem Formulation, Work Plan, and Sampling and Analysis Plan for site-specific tissue contaminant residue sampling field studies (to decrease the uncertainty regarding the use of conservative BAFs, BSAFs, and BCFs) shall be submitted along with the SLERA revisions.

General Comment #5:

Regarding the Tables in the Appendices where ingestion rate parameters are listed, footnotes shall be provided for all these Tables that ingestion weights have been corrected to account for percent moisture and are listed in dry weight. And, the

percent moisture that was used for the correction shall be provided as well in the footnotes.

General Comment #6:

For Appendix G, state whether LPAHs in the Intracoastal Water sediment were detected. And, for Appendix I for the pond sediment, state whether LPAHs and phenanthrene were detected.

In Table D-1 (Exposure Point Concentrations for Soil North of Marlin Ave), the footnote for acenaphthylene, dieldrin, endrin, and endrin ketone shall state the rationale for why these are not COPECs.

General Comment #9:

Regarding contaminants identified as background that exceed conservative ecotoxicity screening levels, a separate Table shall be provided to transparently identify these contaminants to recognize the contribution from both site and background contaminants.

Page xii, last paragraph, the last sentence (on insignificant risk from silver in the ponds after the discussion -posing attribution of risk to background as opposed to the site-upon comparison with background concentrations in the ICW surface water background area) shall be eliminated. Instead, since the SLERA benchmark is exceeded, silver shall be carried forward to a BERA Problem Formulation (even if at the very least flagged as background as a potential contributor to risk in a BERA uncertainty section).

The SLERA shall be revised to not use background for eliminating contaminants from an ecological risk assessment or designating them as insignificant risk. Even if a "background" contaminant can be identified, there may also be contribution to risk from the same contaminant attributable to site-related risk (i.e., zinc in soils). This shall be reflected by statements in the document and by proposals in the BERA (Problem Formulation).

Table 20: This Table on Background Comparisons shall be moved to Appendix B. And, for cadmium in the North Soil column of Table 20, the asterisk shall be removed as it does not seem to correspond to the footnote notation ("statistical difference is due to background being greater than site" on Table 20) since in Appendix B for cadmium and the North Soil, it is stated that the site soil mean is statistically greater than the background mean.

General Comment #10:

Eliminate from the SLERA any statements made regarding the insignificance of risk based on average contaminant concentrations. Average exposure concentrations are

inappropriate in ecological risk assessments for interpretation, conclusions, or decision-making (as they are insufficiently protective), and they are not to be used.

Page ix, last sentence: The word "average" shall be eliminated.

Page xi, first paragraph, in the first sentence: The whole sentence shall be eliminated.

Page xi, fourth paragraph, in the second sentence: The average comparison ("and the average HQs are 0.4") shall be eliminated.

Page xii, second paragraph, sentences on copper: The words "Although", and "the mean concentration of all four samples is less than the standard. Therefore, it was assumed that there is insignificant risk from the presence of copper in the wetlands area surface water" shall be eliminated. Mean (average) concentrations are not appropriate for interpretative statements for a SLERA.

Page xii, last paragraph: All language on comparisons using mean silver concentrations in pond surface water shall be eliminated, and the sentences reworded since mean or average concentrations shall not be used nor interpreted.

Page 9, first complete paragraph, in the last sentence: The words "Average and" shall be eliminated.

Page 27, entire first paragraph: This paragraph shall be amended (as well as the calculations and tables and resulting interpretative statements elsewhere) for elimination of the presentation and discussion of average media concentrations in the SLERA.

Page 30, Section 3.4.4, second sentence: The two locations where average HQs are discussed shall be removed.

Page 31: The presentation of average concentration-based HQs shall be removed in the first sentence at the top of the page in Section 3.4.6, in the third, fourth, fifth, sixth, and seventh sentences.

Page 32, Section 3.4.7, Pond Sediment: The words "but not for the average scenario for these receptors" shall be removed.

Page 32, Copper, last sentence: The last sentence ("The mean of the three detections is less than the TSWQS.") shall be eliminated.

Page 33, Selenium, third sentence: The words "and mean" and "and three-fold less, respectively" shall be removed.

Page 44, Section 5.2.3, last paragraph, first sentence: The discussion of the average benthic receptor scenario shall be removed.

Pages 46-47: The words “Although” and “the mean concentration of all four samples is less than the standard” shall be eliminated as well as the next sentence beginning “Therefore”.

Page 47, Section 5.3.4: The discussion of comparisons to mean concentrations in the second, third, and fourth sentences shall be eliminated as well as the last sentence in the first paragraph to avoid the perception that averages were inappropriately factored into interpretations of risk in the SLERA, and any other related revisions and recalculations shall be made.

Tables 18 and 19: Elimination of average exposure concentrations language in Tables 18 and 19 (Testable Hypotheses and Measurement Endpoints columns), and elimination of average HQ columns in Tables 24 and 25 shall be done for compliance with the comment that average exposure point concentrations shall not be used for decision-making, and, therefore, any related revisions and recalculations shall be made in the document as well.

In the Appendices, columns shall be removed from the Tables where average media concentrations were used to calculate media ingestion rates (soil and sediment) for all receptors. Also in the Appendices, Tables (C-15, D-15, E-14, F-8, G-8, H-8, and I-8) average media concentrations were used to calculate concentrations in food items for all the receptors; this shall be removed; thus, all other Tables within the Appendices where these average-based calculations were included in columns (for intake calculation as well as HQ calculation) shall be removed. Instead, 95 UCL values shall be used. And, in the text, and in the Tables and Figures following the text, clarifying revisions shall be made, and if there are any additional COPCs with HQs exceeding unity after removing these average-based calculations, they shall be added to the Tables and Figures, and interpretative conclusion statements shall be revised as well.

General Comment #11:

Both minima and average (for the “Refinement”) body weights, and, both maximum and average (for the “Refinement”) food and media ingestion rates shall be used and transparently displayed in Tables 22 and 23.

General Comment # 12:

Regarding the comment on guilds, while there was one general statement made, the SLERA (text, Tables and Appendices) shall state, in every instance, the guild being represented by each of the receptors being assessed (with the format being, for example, small mammal herbivore represented by the deer mouse) for each receptor.

A separate Table shall be provided identifying each guild and its representative receptor being assessed.

Specifically, there shall be a word search in the entire document and where the words "Capitella capitata" are found, the word "polychaetes" shall be inserted in front of the words "Capitella capitata".

General Comment #13:

On page 42, the scientific justification (differences in physiology) shall be provided as the rationale for not extrapolating and using ecotoxicity values across classes of biota, i.e., reptiles from birds, nor earthworms from broccoli. The "Per EPA comments (EPA, 2009 a)" shall be eliminated. Plus, on page 43, in the Uncertainty Section, a Table shall be provided to separately identify contaminants and receptors lacking ecotoxicity values.

In all instances of the "as per EPA" statements, the scientific rationale shall be provided, and the "as per EPA" statements shall be removed.

On page 38, Section 4.1.3, last paragraph and sentence, the "per EPA (2009 a)" shall be removed, and an explanation shall be provided that where bioaccumulation factor values weren't available, the default is to conservative values, until site-specific tissue data can be collected to enable calculation of a site-specific bioaccumulation factor and to reduce the uncertainty.

General Comment #14:

The Figures in the SLERA shall be amended to include all contaminants (i.e., including metals) and to include results with all screening values used (i.e., including AETs) for all locations where hazard quotients (for both direct contact toxicity evaluations and food chain receptor evaluations) exceed unity. And, interpretation shall be provided in the text regarding the concentration gradients and/or hotspots related to the SLERA results.

Multiple Figures shall be utilized to reduce the clutter, and extraneous information (i.e., ERMs-base HQs exceeding unity) shall be removed. Color coding distinguishing HQ exceedances for metal concentrations in locations less than background concentrations shall be presented.

Pages 15 and 16: The sentences (at the bottom of page 15 and in the fourth sentence for Background Soils on page 16) shall be amended to state that all contaminants with HQs greater than one are included in the Figures.

A more exact correspondence between Table 5 and Figure 8 shall be provided.

SPECIFIC COMMENTS

Specific Comment #2:

In Section 3.4.8, Surface Water, on page 32, it is stated that a hazard quotient risk approach was not used to evaluate the surface water data since there are few toxicity values that allow HQs to be calculated that are protective of effects from dietary exposures. Those toxicity values that are available shall be used.

On page 32, Section 3.4.8, first paragraph, the next-to-last sentence shall be amended to include 4,4-DDT.

On pages 32-34, contaminants that are considered bioaccumulative and that were measured above sample detection limits in surface water are discussed. The conclusion that shall be stated at the end of page 34 is that the detected surface water bioaccumulative contaminants of mercury, selenium, and thallium shall be evaluated for surface water food chain effects.

Bioaccumulative contaminants shall be retained for further evaluation if detected regardless of whether they do or do not exceed WQC or TX WQS. Any statements in the SLERA that reflect a connection (in the decision whether to evaluate for food chain effects for detected bioaccumulative surface water contaminants) between bioaccumulative food chain effects and WQC or TX WQS shall be removed. Risk for bioaccumulative food chain effects shall not be deemed insignificant dependent on a connection to WQC or TX WQS; thus, the SLERA shall be revised to reflect this. WQC were not designed to take into account bioaccumulation or bioconcentration (food chain effects) but rather to account for direct contact toxicity effects.

The SLERA shall state whether any of the bioaccumulative surface water contaminants listed by TX in their ecorisk guidance Table 3-1 were detected. If so, all these detected bioaccumulative COPCs shall be flagged for food chain estimation.

Page 47, first paragraph, last sentence: For mercury, the last sentence shall be eliminated after the words "it is believed". And, the rest of the sentence shall be rewritten to state that mercury is bioaccumulative and that food chain effect evaluations were done. The food chain effects evaluations shall be done, and the results shall be summarized. Likewise, in the last paragraph on page 47 for selenium and thallium, the last sentence shall be eliminated, and the words "and food chain effects evaluations were done" shall be added to the end of the sentence (as both are considered bioaccumulative). The food chain effects evaluations shall be done, and the results shall be summarized.

Specific Comment #3:

Page 16, Section 2.6.2, sediment and associated Tables and Figures: The following statement shall be included: "TCEQ's sediment benchmarks are defined as the midpoint value between the initial and second effects level benchmarks, not the initial effects level itself, and that midpoint is considered to be the default sediment PCL for the protection of the benthic community for a particular COPEC". The text, Tables, and appended calculations shall reflect this statement. See, for instance, the footnote in Table 21.

Specific Comment #7:

Table 23 and elsewhere: The sediment ingestion rate for the sandpiper is incorrect (off by a factor of 10; was 1.9 %, and shall be corrected to 19%). The text, Tables, calculations, and presentation and interpretation of results shall be revised. All related corrections shall be made.

Specific Comment #9:

Regarding page 32, Section 3.4.8, food chain estimations shall be done for mercury, selenium, and thallium, which are bioaccumulative contaminants detected in surface water. For these metals, literature-based conservative bioconcentration factors (BCFs) shall be used to estimate aquatic prey item tissue concentrations based on surface water concentrations of metals, and literature-based surface water ingestion rates shall be used to account for receptors' uptake of contaminants ingested from surface water.

WQC are not appropriate screening criteria for the bioaccumulative metals detected in surface water (mercury, selenium, and thallium) nor to be used to eliminate these metals from food chain effects evaluations. Food chain effects evaluations shall be done. Thus, the SLERA shall include a surface water food chain assessment for all surface water bioaccumulative contaminants identified regardless of whether or not there were exceedances of WQC.

For fish receptors, there shall be a comparison and discussion of site surface water contaminant data to tissue-based toxicity effect values from Jarvinen and Ankley's 1999 document (entitled Linkage of Effects to Tissue Residues: Development of a Compendium Database for Aquatic Organisms Exposed to Inorganic and Organic Chemicals) to assess protectiveness to fish themselves from surface water contaminants.

Pages xi (last paragraph) and 46, Section 5.3.1, Intracoastal Waterway on selenium in surface water: The second sentence and the third (last) sentence (with the words "difficult to assess") shall be eliminated. It shall be stated that selenium is a bioaccumulative contaminant, and that thus, literature-based food chain effects evaluations were done for surface water)", the evaluations shall be done, and the results shall be summarized. The decision for proceeding further to collect site-specific tissue contaminant residue data for a BERA shall not be based on

exceedances of WQC (but rather based on HQ exceedances of unity from food chain effects evaluations), neither for selenium nor for any other bioaccumulative surface water contaminant.

The words "difficult to assess" shall be removed from sentences in the SLERA about food chain effects, and, instead, revisions shall be made indicating the need to collect site-specific tissue residue contaminant data in support of a BERA.

Page xii, second paragraph: The next-to-last sentence on mercury shall be eliminated, and the last sentence on mercury shall be reworded to state that it is bioaccumulative, and the rest of that sentence shall be eliminated. It shall be stated that literature-based food chain effects evaluations were done for surface water, and the evaluations shall be done, and the results shall be summarized. The decision for proceeding further to collect site-specific tissue contaminant residue data for a BERA shall not be based on WQC, but rather based on HQ exceedances of unity from food chain effects evaluations.

Page xiii, in the top and only paragraph, the last sentence for selenium and thallium (with the wording on insignificant risk) shall be eliminated.

Page 25, Section 3.2: In the second sentence, the words "surface water" shall be added to bullet # 1).

Page 26, second paragraph, first sentence: Surface water ingestion shall be included in the sentence regarding estimations of dietary intake from food items and prey.

Page 27: The algorithm shall include a component for surface water ingestion of contaminants.

Pages 29-30: It is stated that Section 3.4.8 discusses potential risks from surface water since HQs were not calculated for each sample that exceeded the surface water quality standard. This sentence shall be eliminated, and language shall be inserted that "for bioaccumulative surface water contaminants detected, food chain effects evaluations were done". The evaluations shall be done, and the results shall be summarized.

Page 42, second paragraph: The last sentence (Only direct toxicity to surface water was evaluated for the aquatic receptors as discussed herein) shall be amended to eliminate the words "Only" and "as discussed herein", and moved to the beginning of the paragraph. The words that shall be added to the end of the paragraph are: "for bioaccumulative surface water contaminants, food chain effects evaluations were done". The evaluations shall be done, and the results summarized.

Page 46, Section 5.3.1: The paragraph shall end at the word "bioaccumulative" in the second sentence. The words that shall be added to the end of the word

“bioaccumulative” are “and food chain effects evaluations were done”. The evaluations shall be done, and the results shall be summarized.

Page 46, Section 5.3.2: In the last sentence, the wording “difficult to assess” shall be eliminated for 4,4-DDT and 4,4-DDD, and it shall be stated that “there were no site-related detections of these two contaminants in the site surface water samples”.

Page 47 in the top paragraph for mercury (a bioaccumulative contaminant detected in North Area wetlands): The last sentence with the words “insignificant risk” shall be removed.

Page 47, Section 5.3.4, Ponds for the selenium and thallium discussions in the last paragraph. The last sentence (with the words “insignificant risk”) shall be eliminated. The words that shall be added to the end of the paragraph are “Food chain effects evaluations were done”. The food chain effects evaluations shall be done, and the results shall be summarized.

Appendices: Revisions shall be done to incorporate evaluation of surface water contaminants.

Specific Comment #10:

Page 35, Section 4.1.1, first paragraph, last sentence: This sentence shall be reworded to state “may result in an overestimate of risk”.

Page 36, last paragraph, second sentence: The word “unnecessary” shall be removed, and the word “likely” shall be replaced with the word “may”.

Page 37, first complete paragraph, first sentence: The word “highly” shall be removed.

Page 40, first complete paragraph, and first sentence about the uncertainty due to lack of screening values: Cross reference shall be provided to, and a separate Table shall be provided for contaminants lacking ecotoxicity values, by receptor and by media.

Page 40, second complete paragraph, last paragraph: The word “overly” shall be removed.

Page 41, last paragraph, second sentence: The words “for the South Area” shall be added at the end of the sentence.

Page 42, third paragraph, last sentence: The word “conditional” shall be removed.

Specific Comment #13:

The previously submitted sediment ERM-Quotient analysis for the North Area Wetlands that indicated a probability of toxicity to the benthic community in four of the five samples shall be considered an additional line of evidence (indicative of the probability of toxicity) when making the risk management decision, i.e., SDMP, at the end of the SLERA to continue onto a BERA.

Specific Comment #14:

b) Jarvinen and Ankley tissue-based ecotoxicity values (see Specific Comment #9 for the reference) shall be used for assessing surface water contaminant concentrations for protectiveness to fish.

Specific Comment #16:

Regarding the comment for inclusion of terrestrial plants as a receptor, while noted that plants were included in Table 18 as an assessment/measurement endpoint, page 22 (Section 3.1.1) shall include a description for the rationale for selecting terrestrial plants analogously given for the detritivores and invertebrates (first bullet under Section 3.1.1) since plants as an endpoint are listed in the Section 3.1.1 Terrestrial Receptor's subheading (entitled Detritivores, Invertebrates and Terrestrial Plants).

Specific Comment #17:

Tables 18 and 19: In the Measurement Endpoint columns for mammals and birds, the word "bioconcentrate" shall be changed to "bioaccumulate".

Table 19: The text under "Testable Hypotheses for SLERA" for avian predators shall additionally include the words "intake levels do not exceed TRVs."

SUMMARY:

Because of the use of inappropriate methodology (inclusion of extraneous information such as ERMs, averages, background statements, and 95 UCLs for sedentary receptors), COPCs to be carried forward to the BERA are not clear, and shall be made clear. Omission of some COPCs (with HQs exceeding unity and those where AET values were used in the comparisons) in presentation on the Figures adds to the difficulty on clarity of COPCs to be carried forward to the BERA and clarity on decision-making, clarity shall be provided. Additionally, interpretive statements regarding the significance of risk (inferring the use of ERMs, averages, background, and 95 UCL for sedentary receptors), and the inappropriate implication that it is acceptable to dilute out risk to benthic receptors over hundreds of acres of wetlands habitat, and the inappropriate implication that is acceptable to use a visual evidence of "stress" for the benthic receptors as a line of evidence are not responsive to EPA comments, and shall be eliminated.

OTHER COMMENTS:

Page 31, Section 3.4.6, North Area Wetlands Sediment and elsewhere: The reference to Figure 9 should be to Figure 11. All text references to Figures (and Tables) shall be verified for accuracy.

Page 45, Section 5.2.3, North Area Wetlands, last sentence: Clarification shall be provided since it was unclear whether it was intended to say that the exposure point concentrations of lead and zinc when compared to their ERL/ERM midpoints resulted in HQs less than one. If this is the intention, then references shall be made to the supporting Figure and Table. It shall be clarified whether Figure 11 mentioned on the previous page applies (and thus, a supporting Table shall be cited since Table 25 does not list lead).

Table C-5 and elsewhere: The parenthetical phrase "normalized for bw" shall be modified so as to not imply that the soil ingestion rate value has already been divided by the body weight of the receptor. Also, an indication that the rates reflect dry weight shall be made. The "see Food Conc page" phrase shall be changed to "see Tables C-15, 16".

Appendix C from the Phase 1 soil data and proposed Phase 2 soil sampling activities letter (which is entitled Site Soil Biological Activity Considerations) shall be included as an appendix in the SLERA.

In the Appendices in this SLERA, clarification shall be provided for the difference between Table C-1 and C-2 (and analogously between D-1 and D-2). Is C-1 (as well as D-1) for subsurface soil, and C-2 (as well as D-2) surface soil? Clarifying footnotes shall be provided.